FIGURE 1

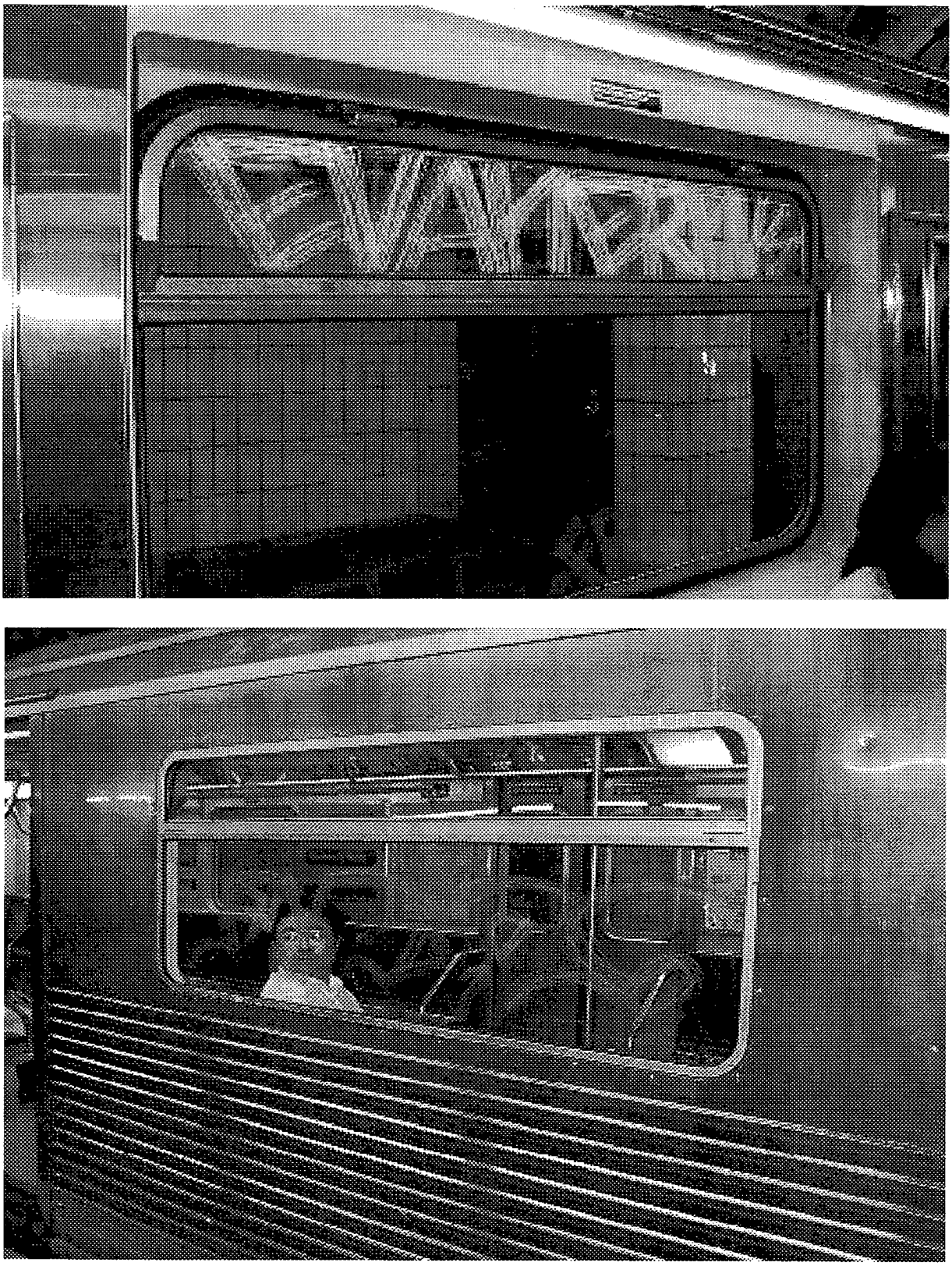


FIGURE 2

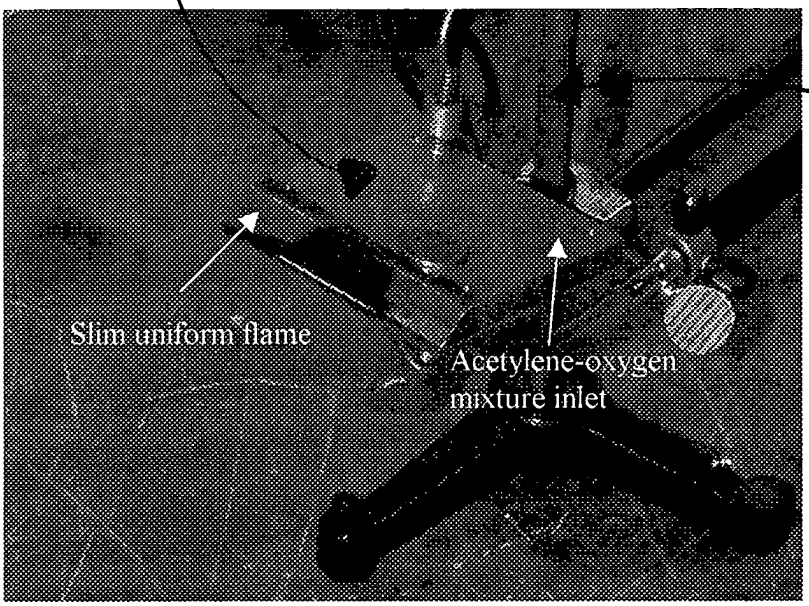


FIGURE 3

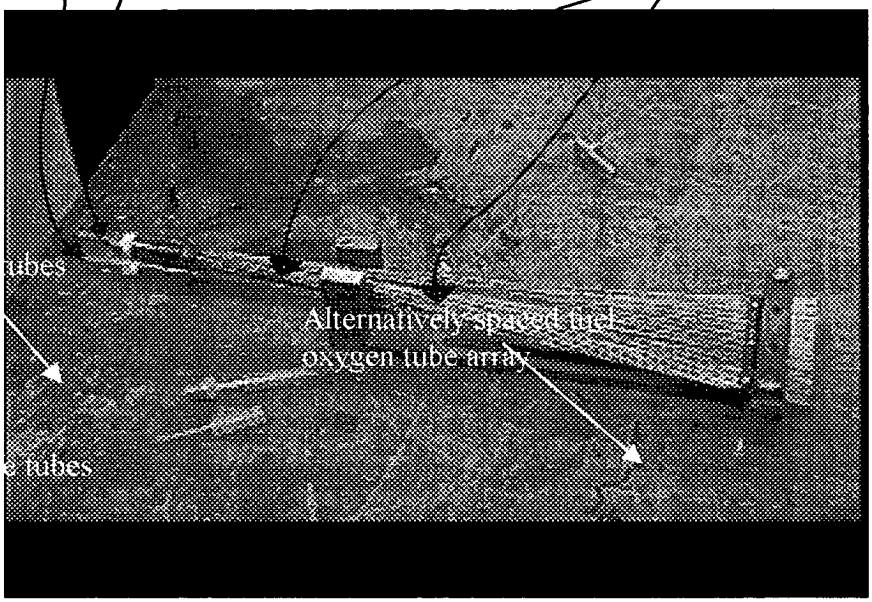


FIGURE 4

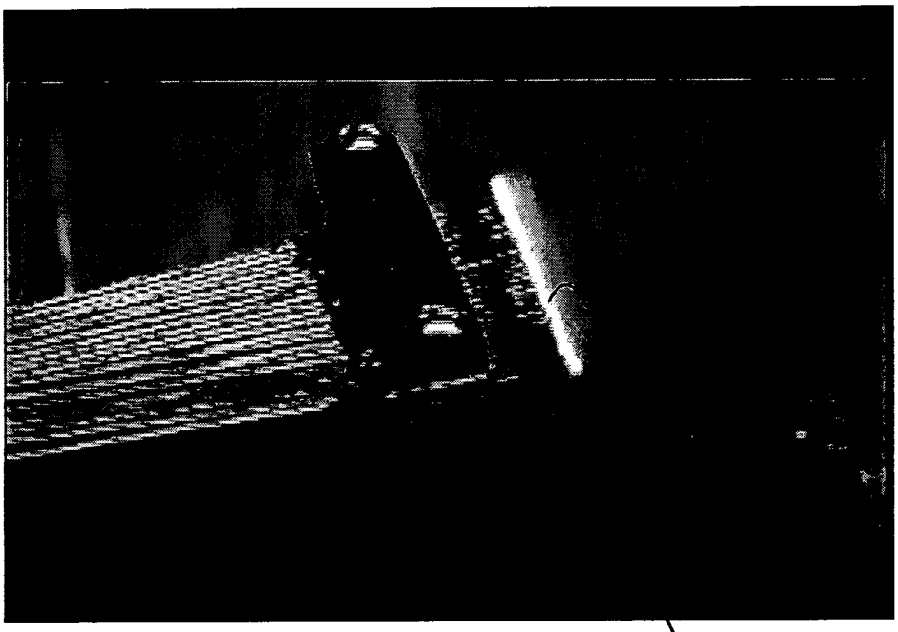


FIGURE 5

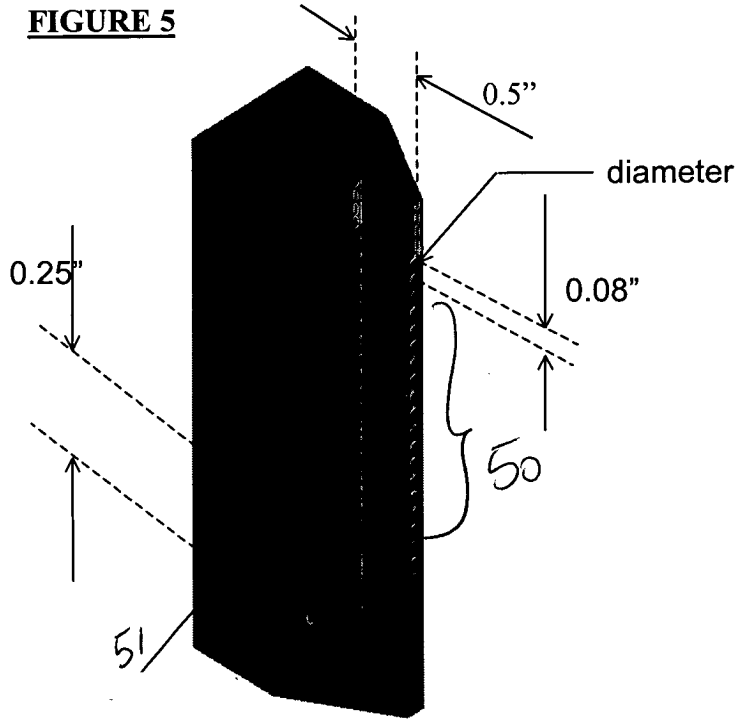


FIGURE 6

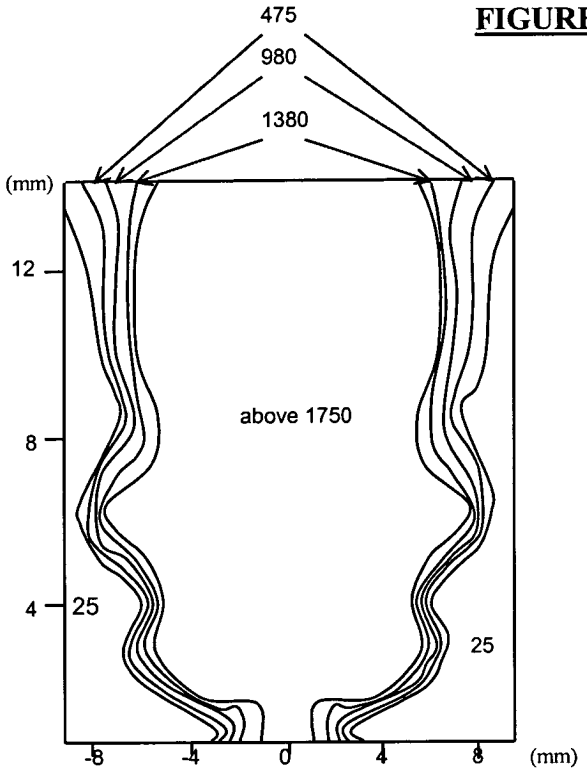


FIGURE 7

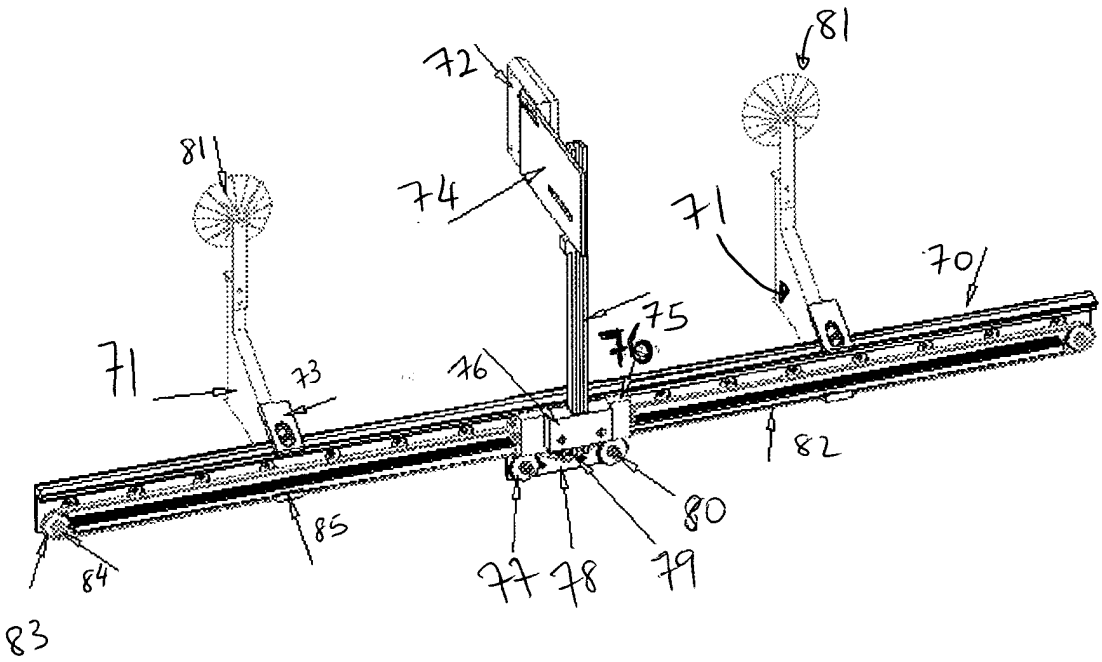


FIGURE 8

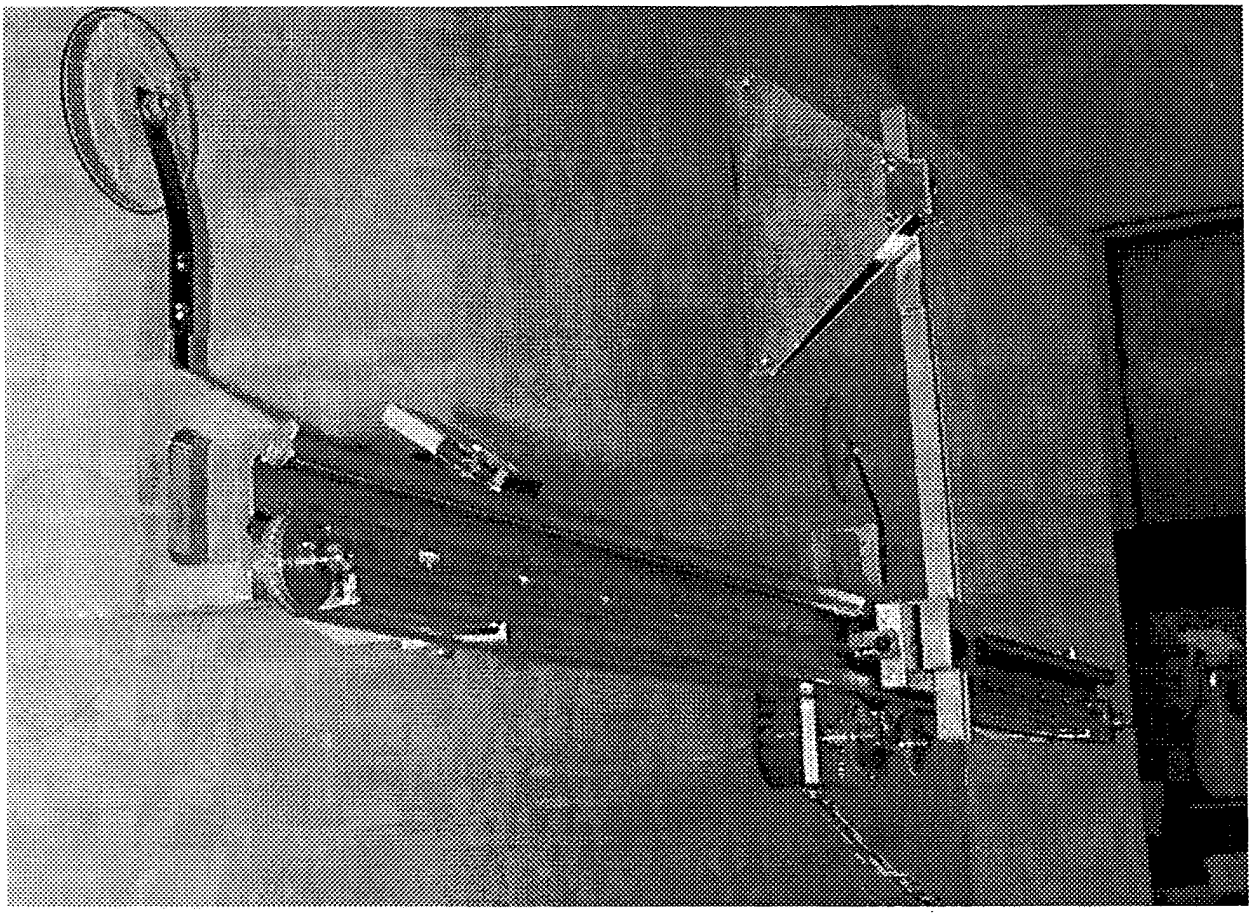


FIGURE 9

PRIOR ART

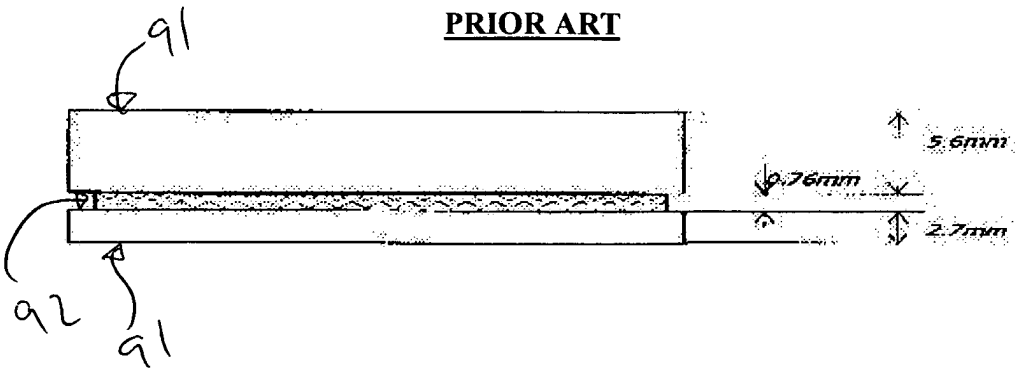
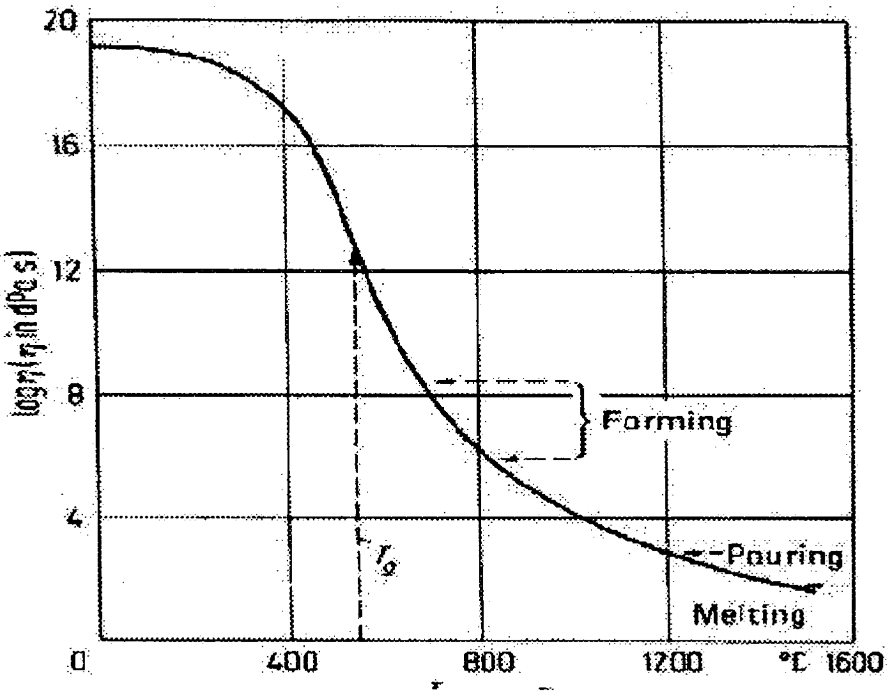


FIGURE 10



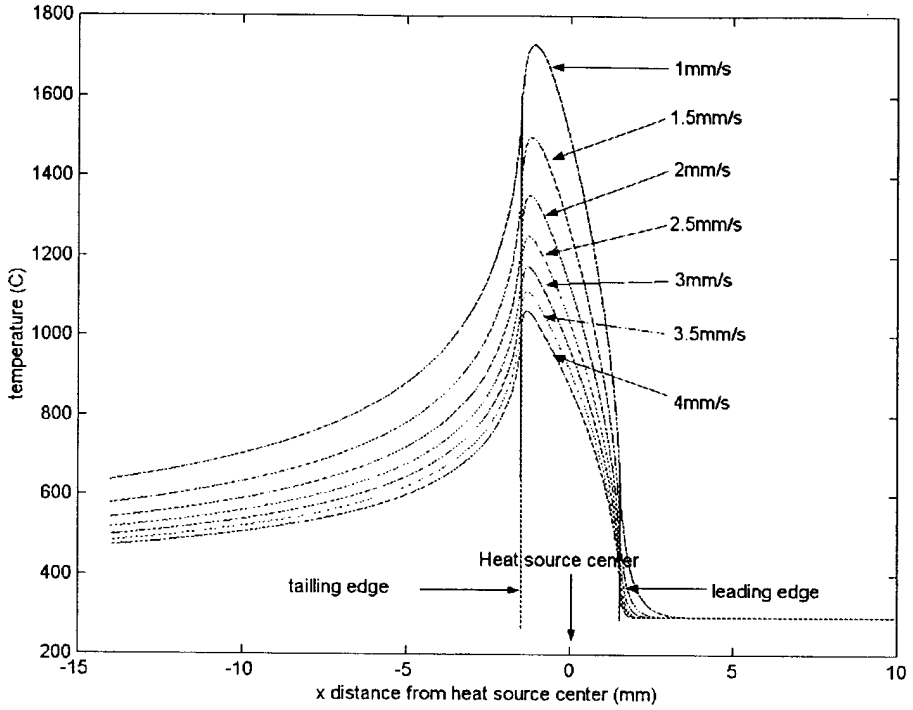

1800
1600
1400
1200
1000
800
600
400
200
-15
-10
-5
0
5
10
temperature (C)
x distance from heat source center (mm)
1mm/s
1.5mm/s
2mm/s
2.5mm/s
3mm/s
3.5mm/s
4mm/s
Heat source center
tailling edge
leading edge

FIGURE 11

FIGURE 12

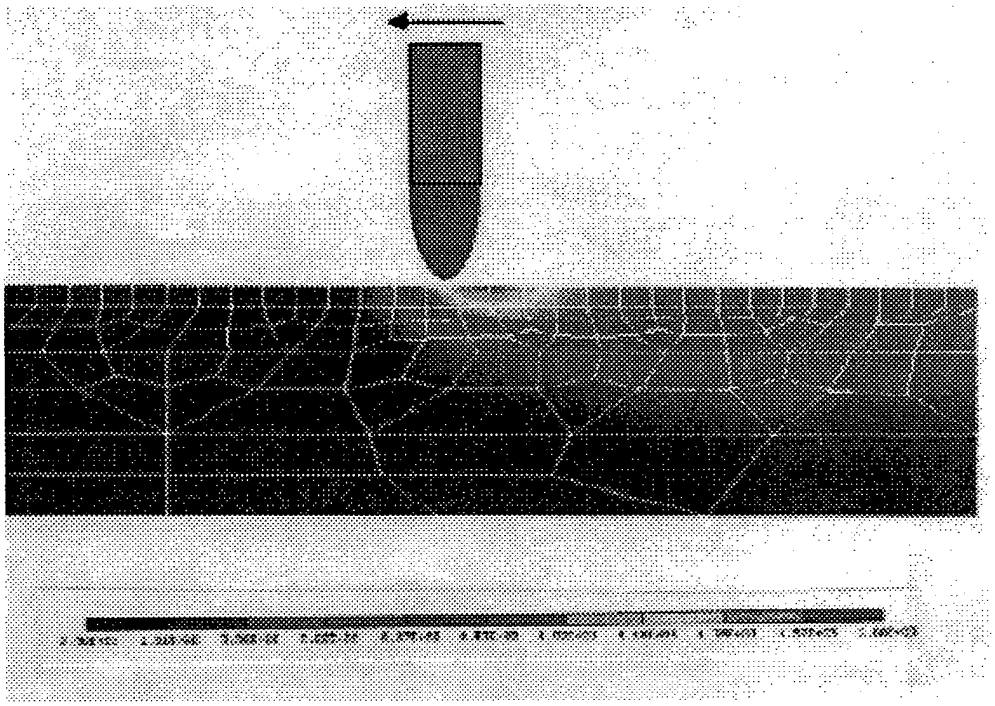
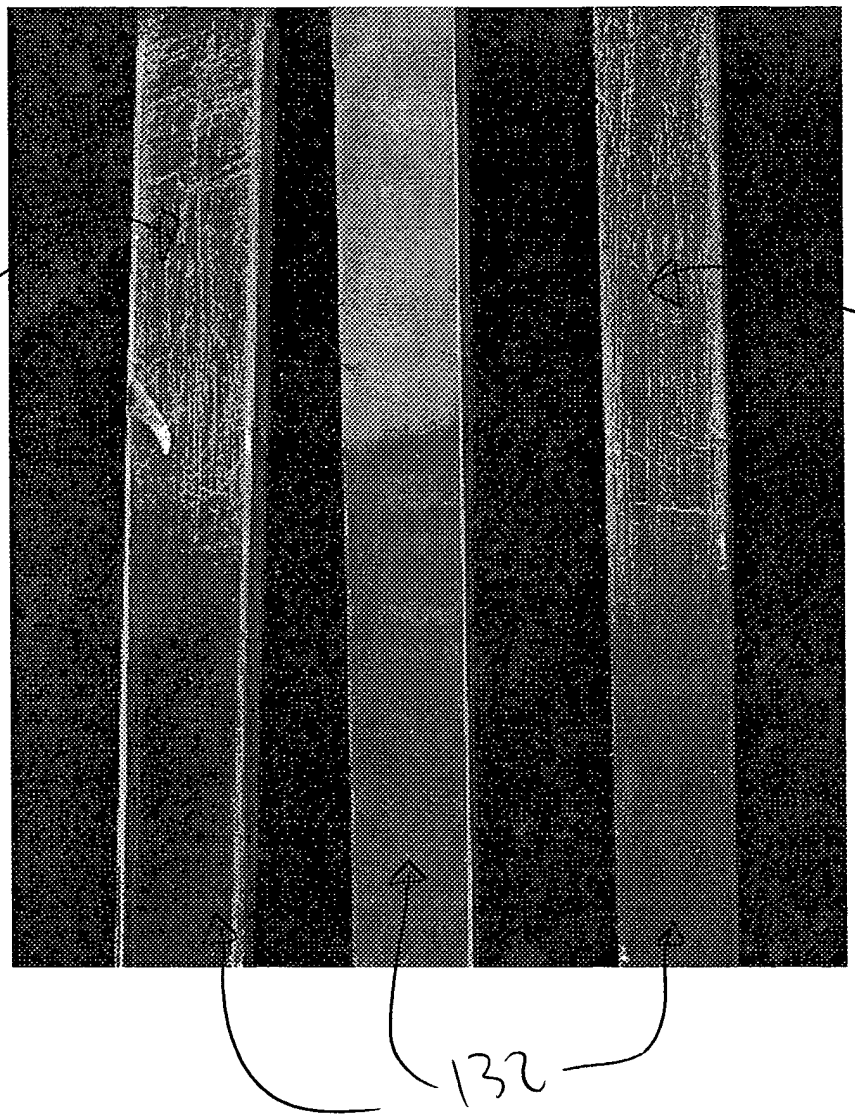


FIGURE 13



REPRESENTATIVE RESULTS OF OPTIMAL, AND SUB-OPTIMAL, HEAT SOURCE VELOCITY AND FUEL FLOW RATE COMBINATIONS

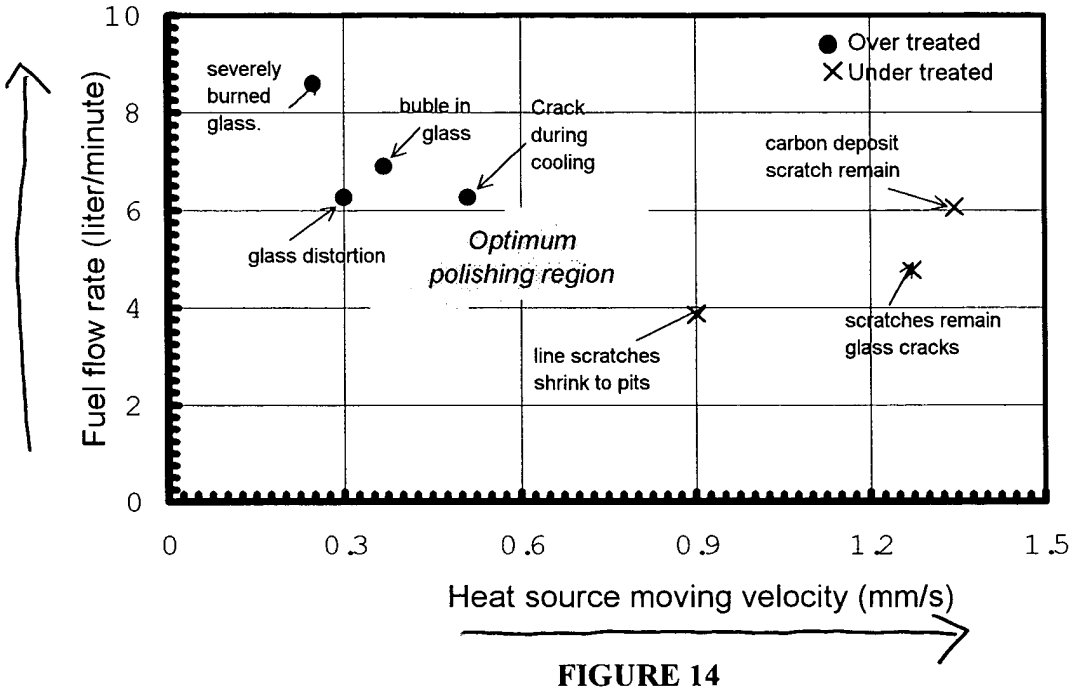


FIGURE 14

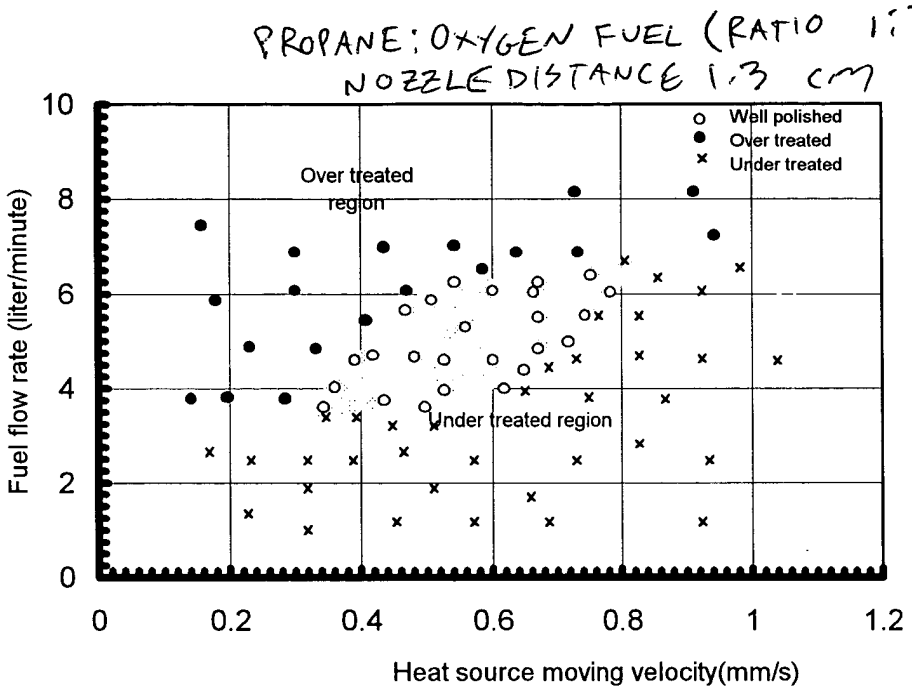


FIGURE 15

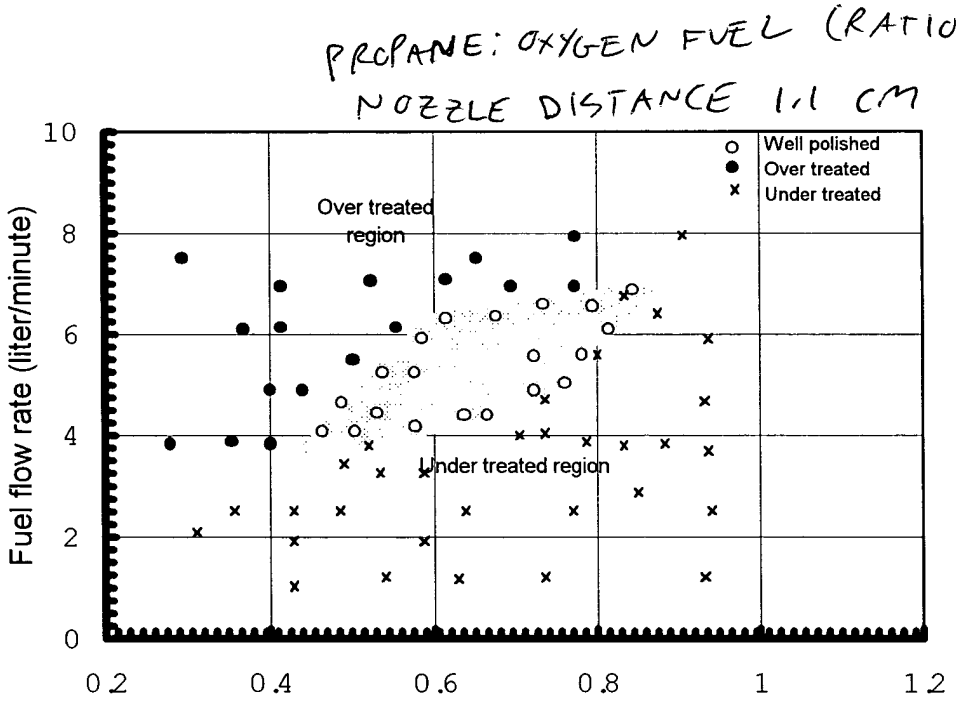


FIGURE 16

PROPANE:OXYGEN FUEL (RATIO 1:3.9)
NOZZLE DISTANCE 1.0 cm

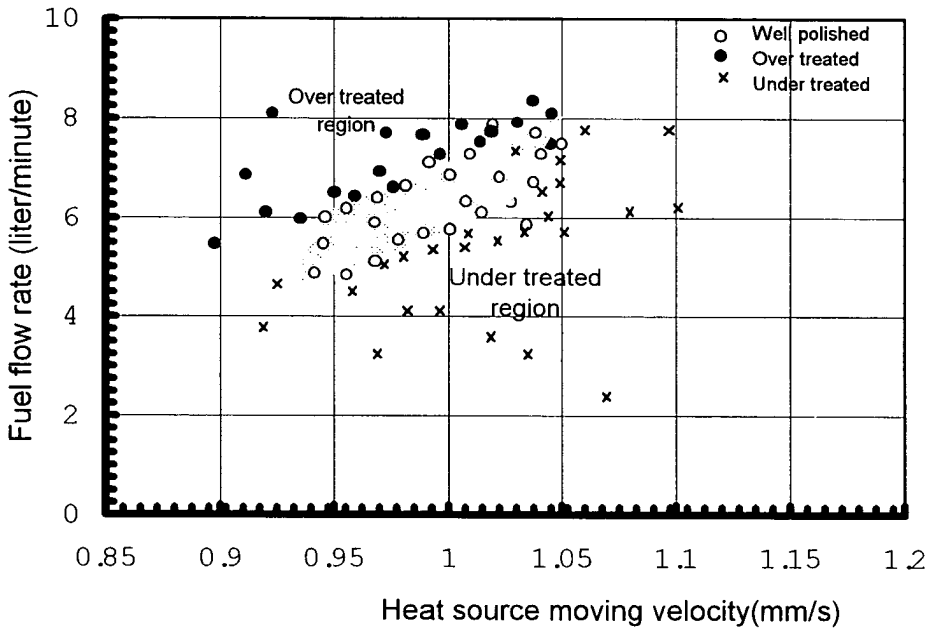


FIGURE 17

PROPANE:OXYGEN FUEL (RATIO 1:3.3)
NOZZLE DISTANCE 0.9 cm

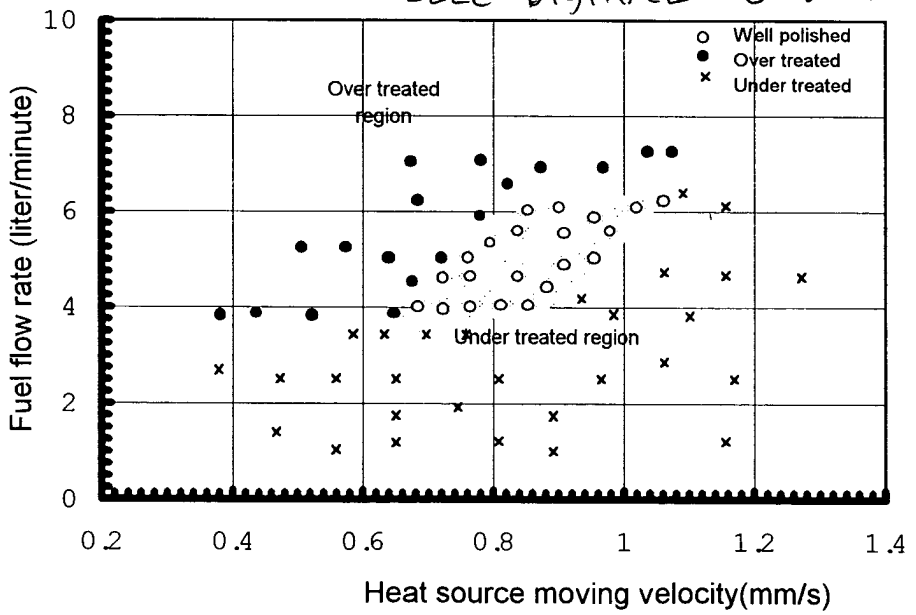


FIGURE 18

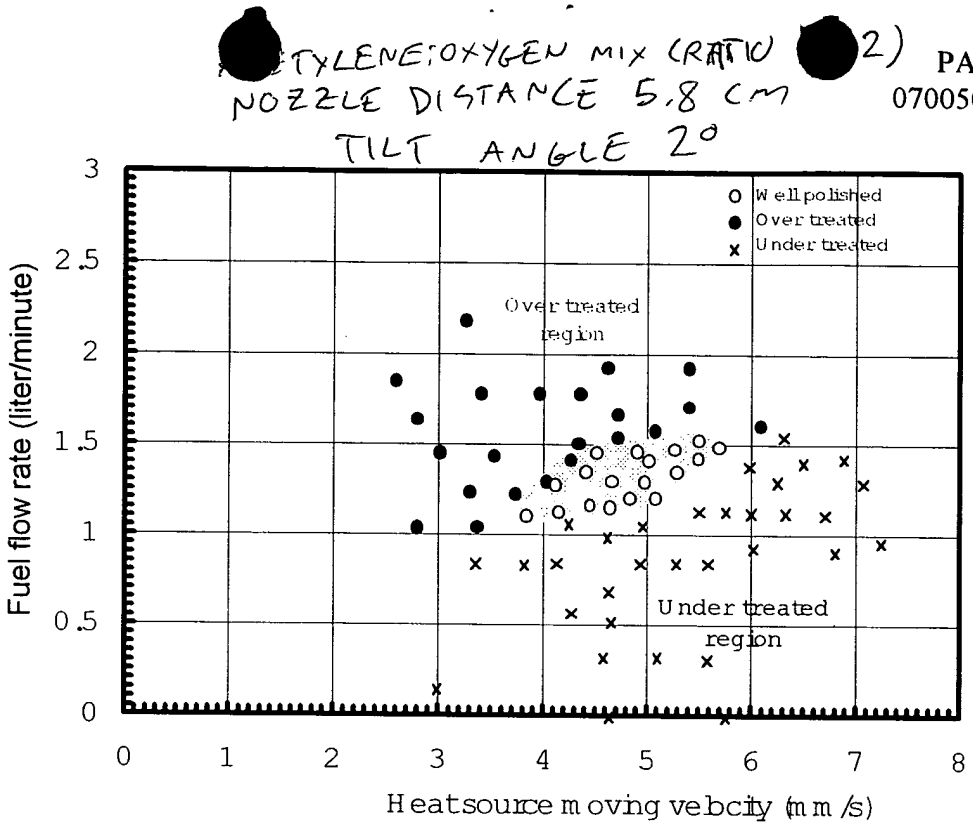


FIGURE 19

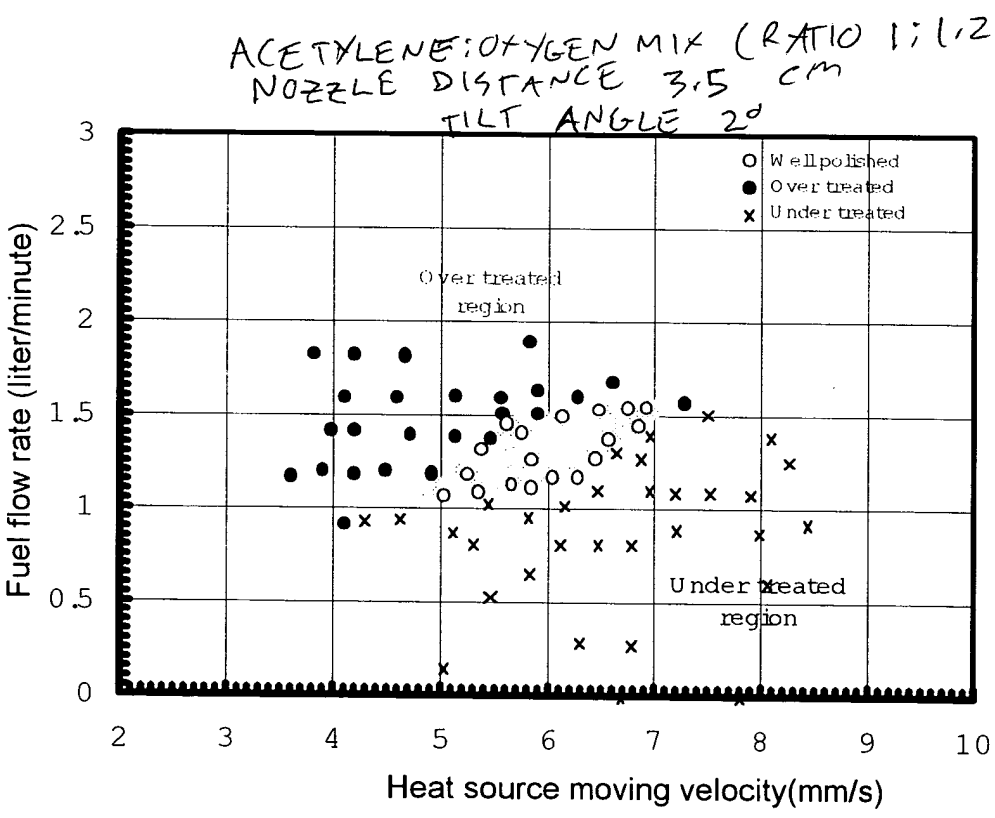


FIGURE 20